Non-Syndromic Multiple Supplemental Supernumerary Teeth in Permanent Dentition: A Case Report

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Abstract

Aim and objectives: "Supernumerary teeth" is an infrequent developmental alteration that appears in any area of dental arches and can affect any dental organ. Multiple supernumerary teeth can be associated with several syndromes; however, this issue is rare in individuals with no other associated diseases or syndromes.

Case description: We documented a case of non-syndromic multiple supplemental supernumerary teeth in the three quadrants and premaxillary region of permanent dentition of an adult male patient, an incidental findings during routine radiographic examination. Likewise, there are several principal factors should be considered in treatment plan priority are the patient age, developmental dentition stage of both permanent teeth and supernumerary ones and alterations in the eruption, position or integrity of the permanent dentition.

Conclusion: regular clinical and radiographic controls particularly for supernumerary teeth in mandibular premolar regions and extraction only the conical erupted supernumerary tooth in the right maxillary quadrant due to the implant replacement was suggested.

Key words:. *Supernumerary teeth, non-syndromic, permanent dentition*

Introduction

Supernumerary teeth may be defined as any teeth or tooth substance in excess of the usual configuration of twenty deciduous, and thirty-two permanent teeth. They can be present in the maxilla or in the mandible that Single supernumerary occur in 76 to 86 percent of cases, double supernumeraries in 12 to 23 percent of cases, and multiple supernumeraries in less than 1 percent of cases [1]. Luten found that 97 percent of supernumerary teeth were located in the anterior region with only 3 percent representing premolars, while Bodin and Thomsson found 10.9 percent of supernumerary teeth to be premolars [2]. However, case involving multiple supernumerary teeth (>five) most commonly involve the mandibular premolar region [3]. The prevalence of supernumerary teeth ranges from 0.8 to 2.1% in deciduous and permanent dentition, respectively. Moreover, male are affected approximately twice as frequently as females in the permanent dentition [4].

Generally supernumerary teeth can be classified as either supplemental or rudimentary. Supplemental teeth have morphology similar to a tooth of the normal dentition, while rudimentary teeth are small and conical. In most cases, supernumerary premolars tend to be supplemental [3]. Multiple supernumerary teeth are more common when a syndrome is involved; however, it may be rare in the absence of any associated syndrome. In such cases, the mandibular premolar region is the common sight of occurrence.

Fig. 1. Panoramic radiograph showing distribution of ten supernumerary teeth (arrows)

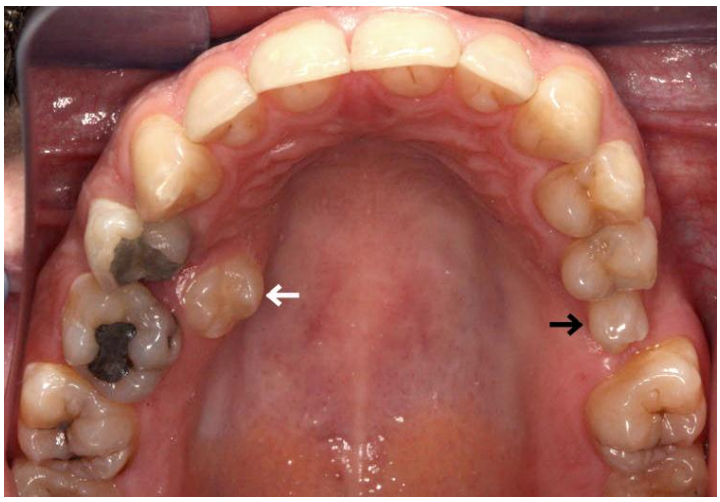

Fig.2. Intra-oral view of the maxillary arch. Conical erupted supernumerary teeth in the right quadrant (black arrow) and palatally displaced second permanent premolar in the left quadrant (white arrow).

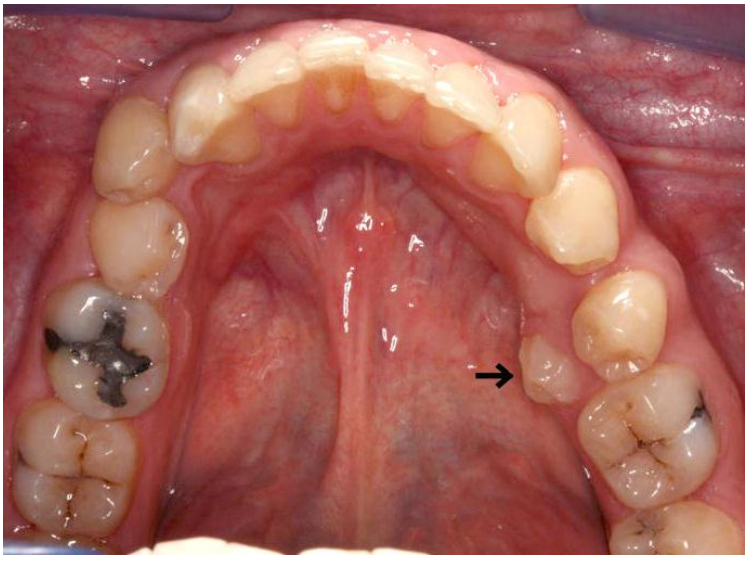

Fig.3. Intra-oral view of the mandibular arch. The arrow shows lingually erupted supernumerary premolar.

The exact etiology of supernumerary teeth is unknown; however, a familial tendency has been noted [5]. Besides, a combination of genetic and environmental factors must also be considered in the etiology of supernumerary teeth, as Shapira and Kuftinec propose hyperproductivity of the dental lamina and dichotomy of tooth germs as etiological factors, which have been supported by *in vitro* experiments [6].

Effects of supernumerary teeth on developing dentition range from failure of eruption, tooth displacement, diastema, crowding and adjacent teeth root resorption. Radiographs are the most reliable and definitive method for the diagnosis for supernumerary teeth. The most commonly radiographs are panoramic radiographic, periapical and occlusal radiograph; however, a panoramic radiograph is a most useful screening radiograph as it shows all area of the maxilla and mandible.

Case description

A 22 year old male presented for an initial dental examination which involved taking bitewing and panoramic radiographs. The panoramic radiograph showed the presence of ten supernumeraries in three quadrant as well as premaxillary region (Fig. 1).

Intra-oral examination revealed the presence of full set of permanent teeth including the third molar except the maxillary right and mandibular left first molar which were extracted at the childhood (Fig. 2&3). Extra-oral examination did not reveal any abnormality. Several clinical exams were then performed to discard the presence of systemic pathology, and they all showed normal results. Familial history was not contributory.

The right mandibular quadrant revealed the presence of three supernumerary teeth to be truly supplemental which appeared to be the same size and morphology of a normal premolar. These teeth had fully formed crowns and roots that were situated at about the apical tip of first and second premolars right mandibular except one which was lying horizontally between the apical tip of lateral incisor and the apical third of the root of second premolar.

There were also three supernumerary teeth resembling premolar in size and morphology. One was relatively bigger in size in comparison with normal premolar and located between the apical tip of first and second premolars left mandibular. The other one was lingually erupted between second pemolar and mesial root of first molar; however, the remaining one was lying between the apical third of the root of lateral incisor and middle third of the root of second premolar which its crown was exactly located above the crown of the unerupted one in this region.

Two supernumerary teeth were found in the right maxillary premolar region. Both had fully formed crowns and partly formed roots, and appeared to be conical in shape and smaller in size of a normal premolar. One was erupted in a space of extracted maxillary first molar, while the other one was situated at the third apical of maxillary canine. In addition, the premaxillary region showed the presence of two calcified structures with peripheral radiolucency at the apical tip of left and right lateral incisors.

The proposed treatment plan consisted of extraction only the conical erupted supernumerary tooth in the right maxillary quadrant due to the implant replacement and regular clinical and radiographic controls particularly for supernumerary teeth in mandibular premolar regions.

Discussion

Literature reports the prevalence of supernumerary teeth within the mandible and maxilla varying from 0.200.9% [7]. Even though the majority of supernumerary teeth in the maxilla, supernumerary premolars have a predisposition for the mandible [8]. However, these results confirm our findings showing that supernumerary teeth occur in the premolar region of the mandible predominantly. Multiple supernumerary premolars are relatively rare, and Bodin found more than half of his cases had only one supernumerary tooth, with only two patients having more than two supernumeraries [9].

It is essential to enumerate and identify the teeth present clinically and radiographically before a definite diagnosis and treatment plan can be formulated. Usually, supernumerary teeth are removed surgically, often due to the retention of the permanent teeth in the region. In cases where the supernumerary teeth do not cause alterations in the eruption, position or integrity of the permanent dentition, a conservative approach is preferred [10].

The surgical removal of unerupted supernumerary teeth must be weighed up against the possible pathological sequelae associated with supernumerary teeth which cyst formation (9 percent) and damage to the adjacent teeth (13 percent) were of greatest concern with premolar cases [9]; however, with the incidence of pathological sequelae being relatively low for the premolar cases, it may be prudent to radiographically monitor these teeth. Consequently, each case must be therefore considered individually concerning its treatment taking into account untoward developments. In this case, close observation with regular radiographic control is recommended.

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